



Residential Traffic Calming Handbook



How to calm excessive traffic and speeding in residential areas

Public Works Department
Traffic Operations Division

The City of Deltona

Residential Traffic Calming Handbook

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Introduction

The City Commission (CC) is aware that speeding and excessive traffic volume are two of the most common residential traffic complaints reported to local law enforcement and traffic engineering officials.

Development in certain city areas has drastically increased the number of vehicles on the roads during peak commuter hours. Frustrated commuters often resort to the use of local roads and streets to bypass congested highways or overloaded intersections. Usually in a hurry to get to work or home, commuters often ignore residential speed limits. The result is an ever-increasing number of concerns from residential areas over safety and quality of life issues.

Residents who live on these local roads perceive a danger to children playing outdoors, while others fear increased auto exhaust pollution, road noise, crime or hazards to walkers, joggers and bicycle riders. Such concerns can lead neighborhoods to organize in an effort to convince elected officials to take action to alleviate these situations.

The purpose of this booklet is to present ways in which residents can find solutions to residential traffic problems as approved by the City Commission. Consideration is given to a variety of residential traffic concerns and to the characteristics of these concerns on a case-by-case basis. Each situation is reviewed with respect to the available traffic calming measures that have been, or could be, found effective to alleviate the neighborhood traffic concern.

The remainder of this booklet outlines these guidelines and procedures which can be used to develop the optimum solution or solutions to each particular situation. There are many factors taken into consideration when reviewing residential traffic concerns, to determine the most feasible traffic calming measure. These factors include: the surrounding roadway network, resident access, speeds and/or volume of traffic, accident history and construction in the nearby area. Thank you for taking the opportunity to review this booklet and also for being a concerned citizen of the city of Deltona.

Should you have any questions please feel free to contact the Public Works Department at (386) 878-8950.

1.0 What Roads Are Covered In This Program?

The calming measures provided in this booklet are specifically designed for city maintained neighborhood roads and streets that are classified as local roads or streets.

Note: Neighborhood roads and/or streets which are classified as COLLECTOR or ARTERIAL roads ordinarily will not be considered for calming under the guidelines of this program. By definition, a collector road's main purpose is to draw the traffic from nearby residential roads and streets in order to provide access to another collector or arterial roadway. In many cases, collector roads serve as primary access to residential areas for emergency vehicles. An arterial is that part of the roadway system serving as the principal network for through traffic flow. The routes connect areas of principal traffic generation and important rural highways entering the city. Special consideration will be given, however, to roads classified as collector roads that have very low traffic volumes and have met the entry requirements for the Neighborhood Traffic Calming Program. At the discretion of the Public Works Director or the City Manager, these roads may be considered for treatment under the guidelines of this program. The Public Works Director will be referred to as the "Hearing Master" in this book.

2.0 Is My Neighborhood Traffic Concern One of Speeding or Volume?

Often residents are the most knowledgeable about traffic concerns in their neighborhood. In fact, reports from citizens are sometimes the only way the City becomes aware of traffic concerns in residential areas. Upon receiving a request about traffic concerns on a residential street, the City performs an investigation. Based on findings from the initial investigation, additional traffic studies may be scheduled. The purpose of these studies is to determine if the traffic concern is related to speeding or volume and to quantify the severity of the traffic concern. These studies will indicate whether the traffic concern qualifies for traffic calming measures.

3.0 Who Pays for Calming Measures?

Roadway changes intended to reduce speeding and/or discourage non-local motorists can result in costly construction. The City Commission establishes an annual budget for the purpose of Residential Traffic Calming.

Once the annual budget has been fully encumbered for a given budget year, the following alternatives are left as options for residents who desire traffic calming measures.

- Waiting list (first come, first serve) for next budget year
- Local assessment
- Neighborhood association funding
- Proportional share assessment of affected residents (Cost Sharing)

Note: Cost Sharing also will be required in situations where neighborhood residents express a traffic calming preference that is more costly than the most economically feasible traffic calming measure deemed acceptable by the Traffic Calming Hearing Master. The difference in cost between that recommendation and the residents' preferred alternative will be absorbed by

area residents. Some funding alternatives for the neighborhood could be handled through a special taxing district, a neighborhood association or by individual contributions by residents in the affected area.

4.0 Speed Calming Measures (Types of measures)

4.1 Civic Involvement/Neighborhood Traffic Watch Program

Upon initial contact by the residents requesting traffic calming assistance, staff will encourage the residents of a neighborhood to develop a Neighborhood Traffic Calming Education and Awareness Program.

This program is designed to bring area residents together to discuss and educate one another with area traffic concerns and possible ways to deal with these concerns (i.e. awareness, flyers, speeding notices, etc.). Another option to address neighborhood speeding concerns is the distribution of flyers, which increases the awareness of residents for the need to control speed. These flyers can be generally distributed through volunteer efforts by residents.

4.2 Roundabouts

Clearwater Beach, Florida



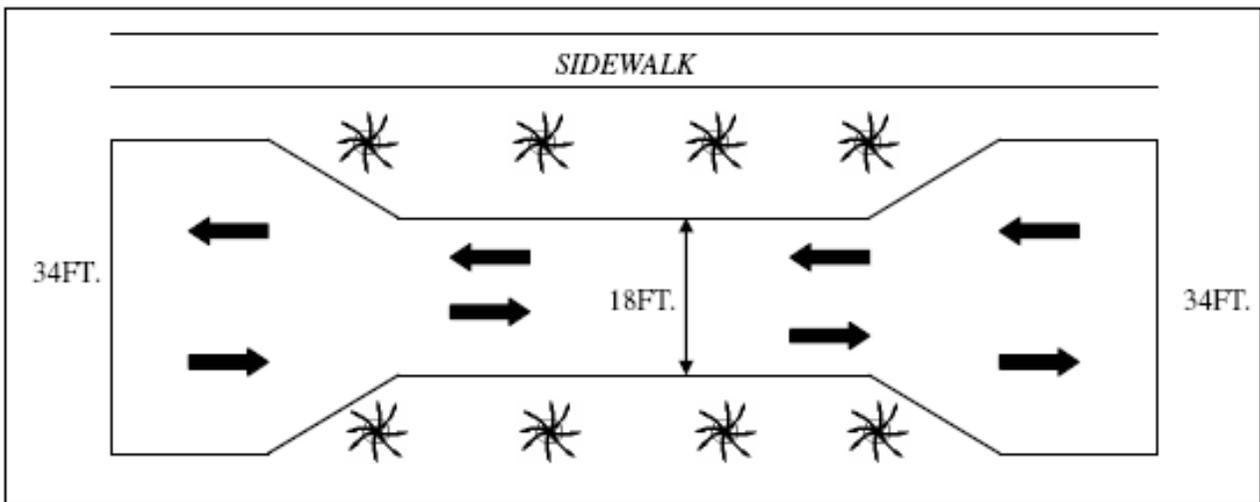
The greatest roundabout ever built in the US. It carries up to 58,000 vehicles per day and 8,000 pedestrians per day.

A roundabout is a raised circular structure constructed at a three-way or four-way intersection. Its objectives are to slow speeding and reduce the number and severity of vehicular accidents.

This measure is most suitable for wide intersections and may accommodate all size vehicles by applying appropriate engineering designs.

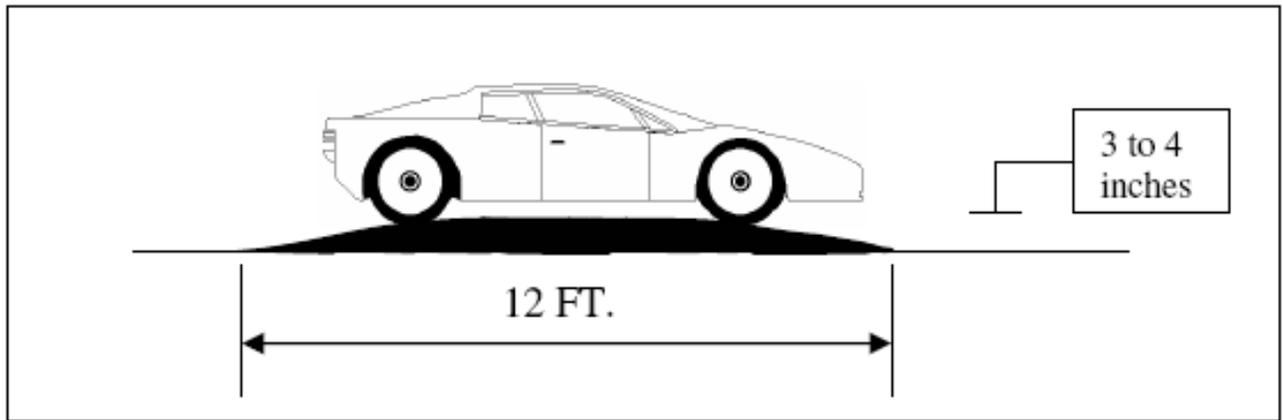
4.3 Street Narrowing / Intersection Throating

These traffic calming measures reduce the width of a section of roadway in a gradual manner. The effect of this measure is to reduce speed and discourage non-local traffic. Motorists react to this measure with slower speed because of a concern of a limited travel path.



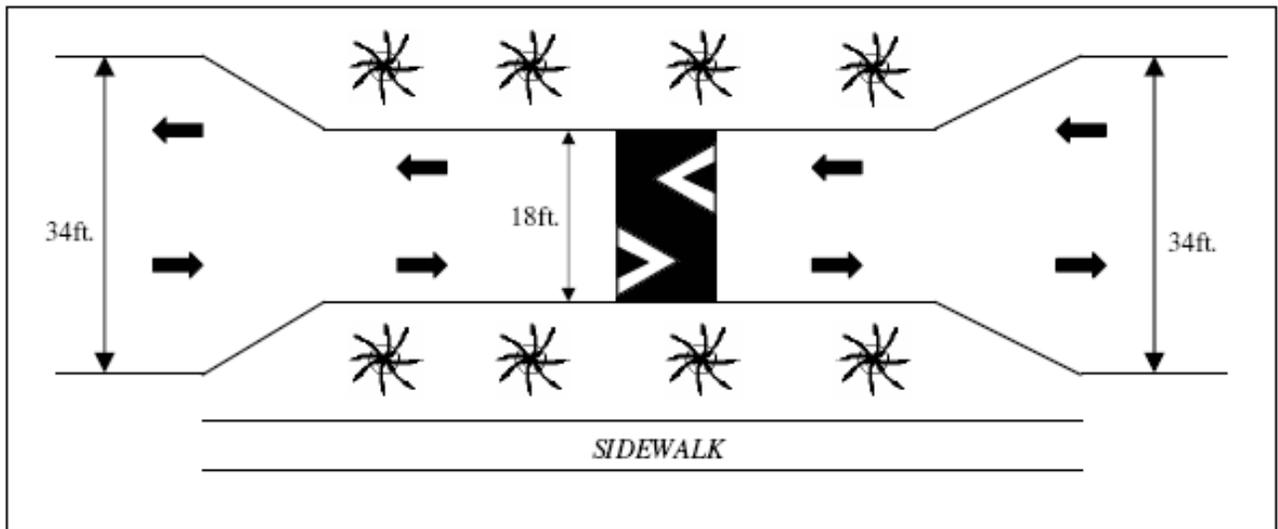
4.4 Speed Humps

A speed hump is a raised pavement feature constructed across the width of the street. It is usually 3 inches high and at least 12 feet in length from the leading edge to the trailing edge. This feature discourages motorists from speeding and encourages them to obey the posted speed limit. When speed humps are constructed, advisory signs also are installed to notify motorists of the speed hump and an appropriate advisory travel speed. The number of speed humps to be installed and their location will be recommended by the hearing master.

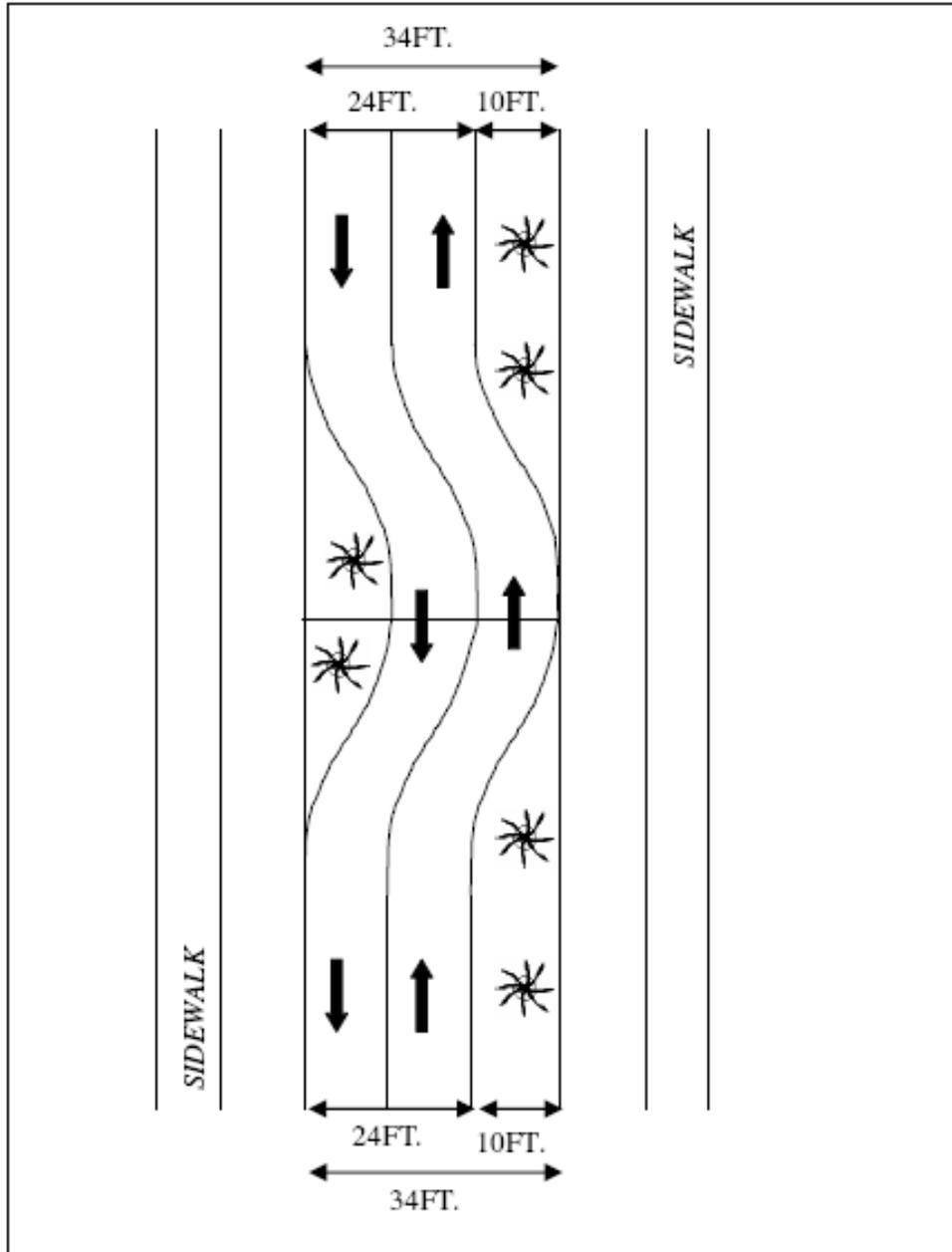


4.5 Narrowed Speed Humps

This traffic calming measure combines the installation of a speed hump as well as a street narrowing within the vicinity of the speed hump. Its objectives are to reduce speed and discourage non-local traffic. By extending the narrowed street beyond the hump area, travel speeds will be reduced over a longer distance than a conventional speed hump.



4.6 Chicanes



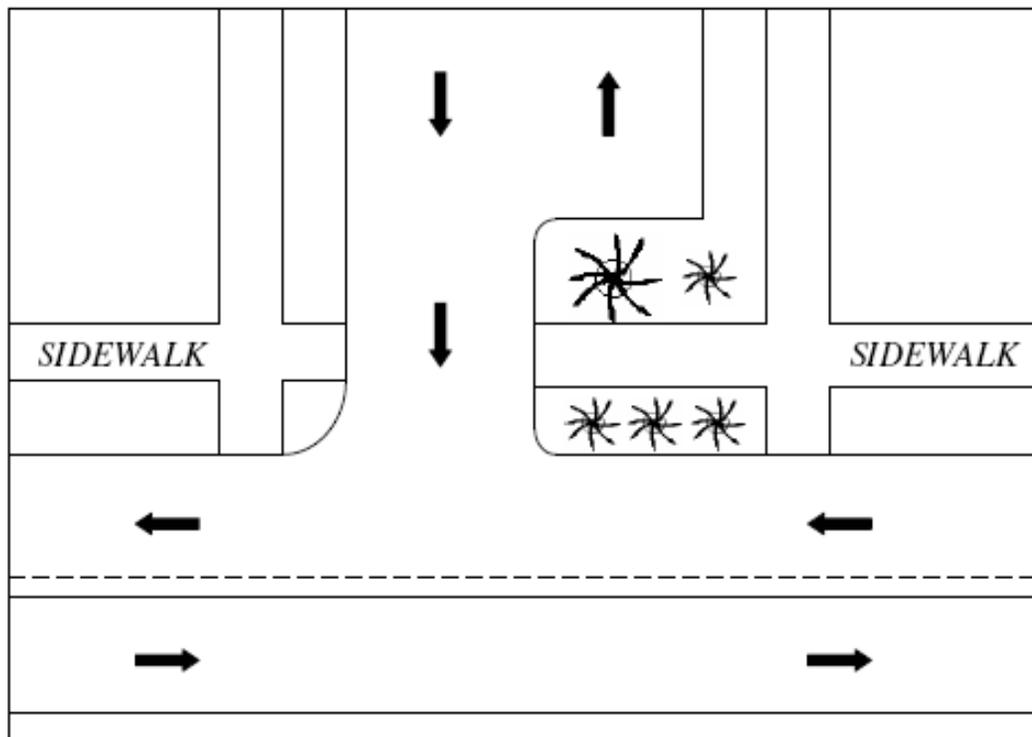
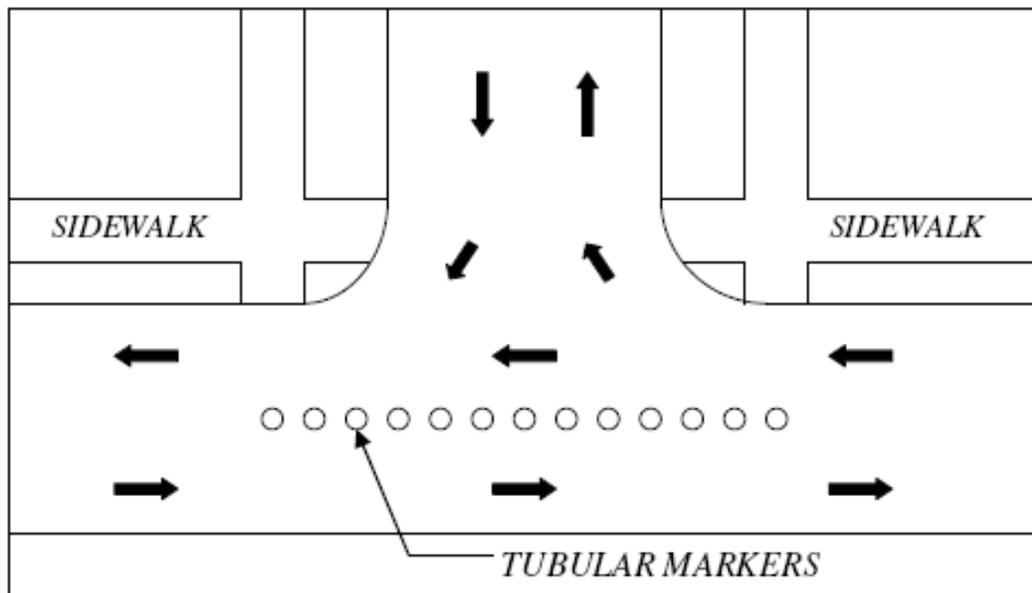
A chicane is a traffic calming measure that reduces the speed of vehicles by providing a narrowed vehicle travel path for a section of roadway. This feature changes the physical characteristics of a roadway section from an existing straight alignment to a series of horizontal curves.

5.0 Volume Calming Measures

5.1 Turn Restrictions and One-Way Streets

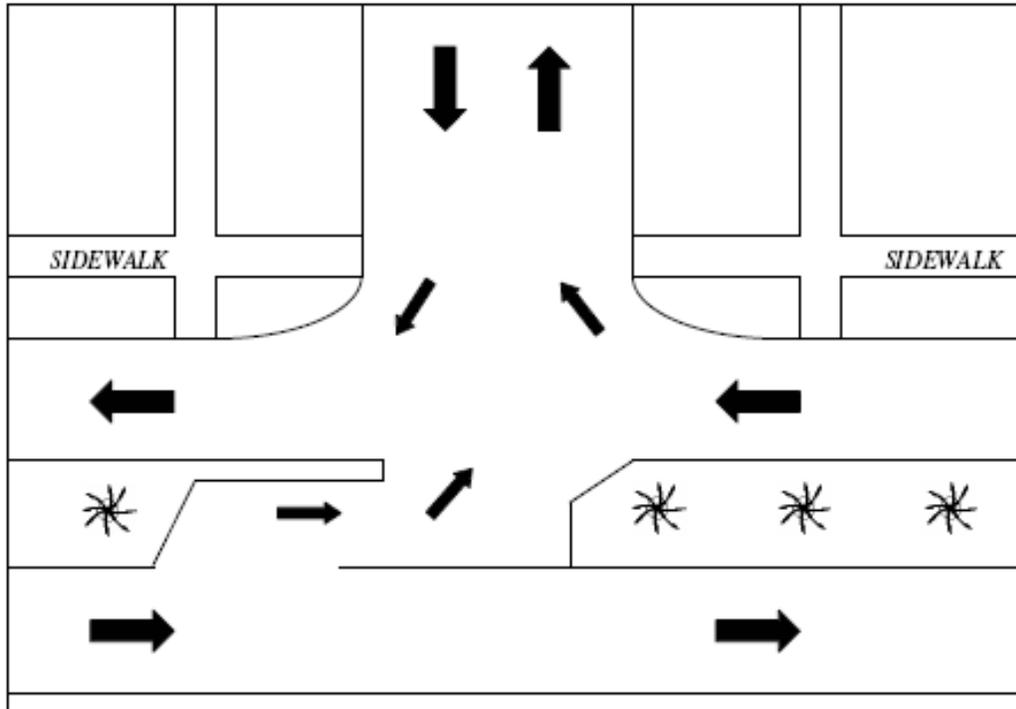
Turn restrictions and one-way streets may be considered in an effort to direct traffic away from a "short-cut" through a local road or street. The effect of this measure is that the traffic will be prohibited from using that particular road or street for cut-through travel.

The neighborhood traffic patterns have to be reviewed with consideration given to the effect on the resident's daily travel. In addition, the possible effect on emergency and enforcement vehicles' travel and response time must be considered.

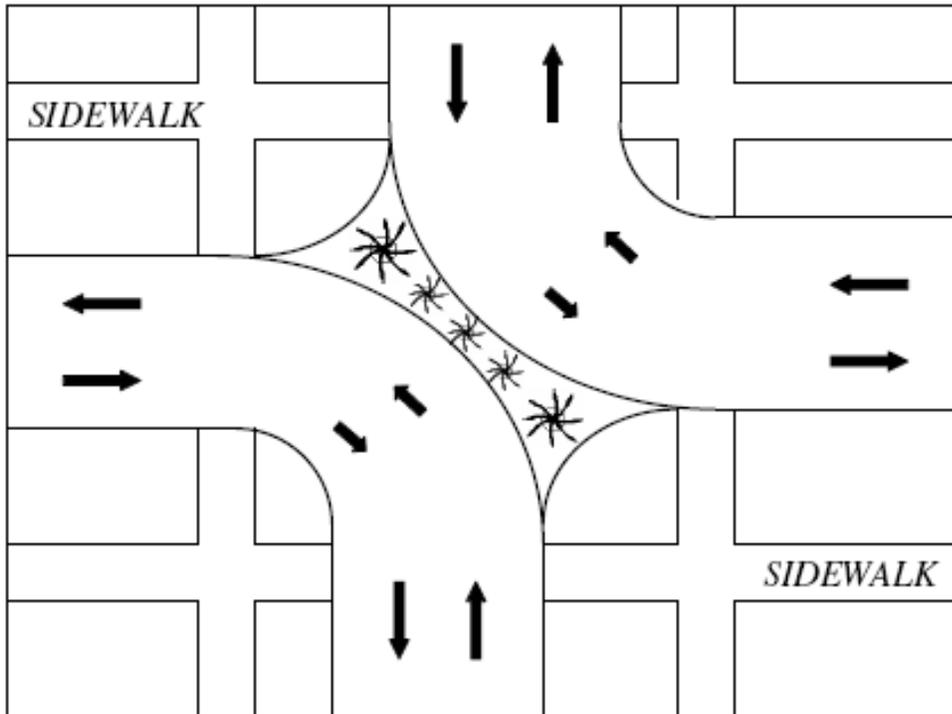


5.2 Median Modifications

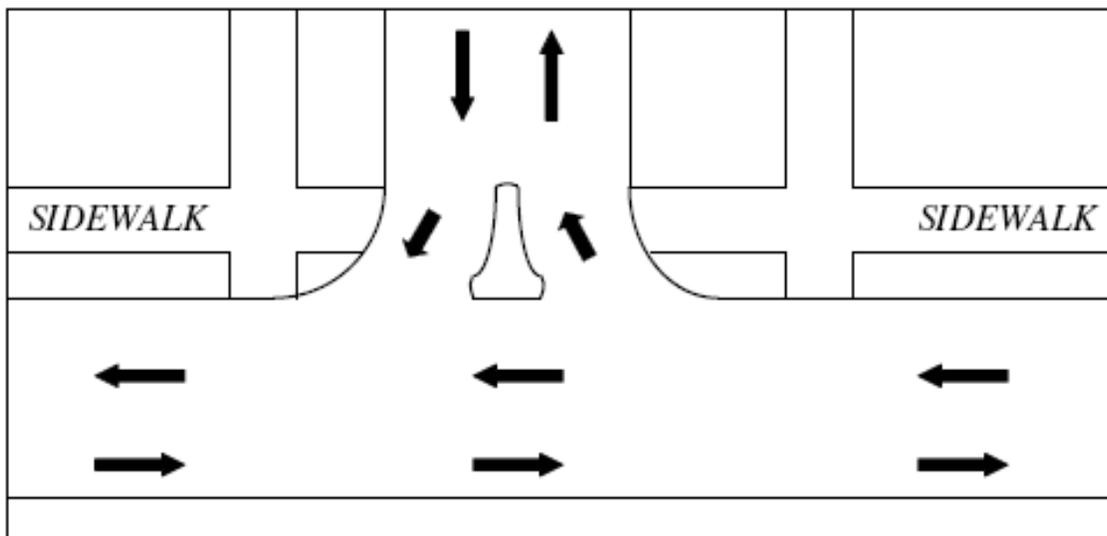
Closing an existing median opening or modifying the median opening to eliminate certain turns can eliminate or restrict a cut-through route used as a commuter bypass.



5.3 Diverters and Partial Diverters



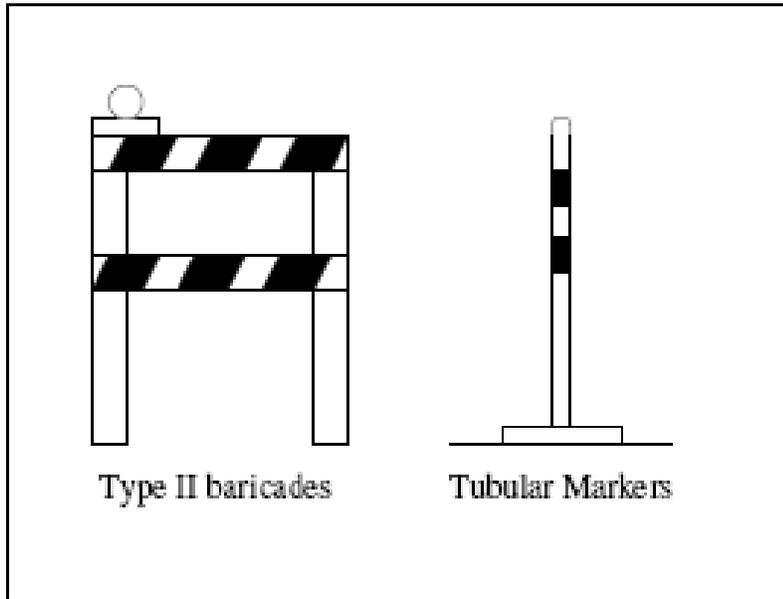
A traffic diverter or partial diverter can be added to an existing intersection to deny the commuter straight through use of a local road or street.



6.0 Other Traffic Calming Measures

Type II Barricades Tubular Markers

Other traffic calming measures may be installed on a temporary basis at the discretion of the Hearing Master. The objective of such an installation in a residential traffic community would be to test the effectiveness and demonstrate the benefit of the traffic calming measure. The use of other measures also may be advantageous when budget constraints prevent the installation of the permanent device.



7.0 Standard Procedure for Implementation of Traffic Calming Measures

Following are the procedures for implementation of traffic calming option(s).

Step 1: Initiation

Step 2: Traffic Engineering Analysis/Classification

Step 3: Hearing Master Preliminary Analysis

Step 4: Hearing Master Public Hearing

Step 5: Hearing Master Recommendation of Traffic Calming

Measures and Designation of the Affected Area for Petition

Step 6: Petition

Step 7: City Commission Meeting

7.1 Step 1: Initiation

Traffic Calming Measures can be requested by any of the following methods:

1. Residents' Requests (A minimum of five signatures from the owners of five separate properties in the neighborhood will be required before studies will be initiated.)
2. Regulatory Agencies Requests

3. Public Service Agencies
4. Staff Field Reviews

7.2 Step 2: Traffic Engineering Analysis/Classification

City staff will review the concern with the person initiating the request to assure that the scope and details of the concern are clearly identified.

A traffic study may include any or all of the following, depending on the scope of the concern.

- Traffic conditions at the location
- Existing traffic signs and pavement markings
- Motorists' travel patterns
- Effect of the roadway system in the vicinity
- Construction in the nearby area
- Traffic or roadway plans for the vicinity and contributing roadway system
- Time of day, day of week relationship
- Apparent causes of concern
- History of the location
- Determination of roadway classification (local, collector or arterial)
- Video tape location
- Emergency and Service Bureau concerns

Traffic studies may be necessary to determine the following information

- 24-hour traffic count to determine the average daily traffic (ADT)
- Vehicle speed check to determine the 85th percentile speed
- Vehicle turning movement counts
- Origination/Destination study
- Pedestrian counts
- Accident report summary
- Collision diagram studies

7.21 Class I: Minor excessive speed

Speed - Measured 85th percentile speed less than 12 miles per hour above the posted speed limit.

Traffic Operations Division staff may request the Sheriff's Office to increase enforcement on a random basis during the hours when the majority of the speeding violations occur.

Neighborhood flyers may be issued if required.

7.22 Class II: Excessive speed or volume

Speed - Measured 85th percentile speed of 12 miles per hour or greater in excess of the posted speed limit **but in no case less than 37 mph**, regardless of the posted speed limit

The 85th percentile speed represents the speed at, or below which, 85 percent of the free flowing vehicles are traveling.

Volume - Hourly volume greater than 12% of the average daily traffic, or more than 10 daily trips per household accessed.

For locations that do not meet the Class II criteria, no additional studies will be conducted within at least three years.

7.23 Notification to other Agencies

Once it has been determined that a given location meets Class II criteria, the following agencies will be notified that traffic calming measures are being considered, and their comment and input will be requested:

- Fire Rescue
- Sheriff's Office
- School Board
- Development Services

7.3 Step 3: Hearing Master Preliminary Analysis

The Hearing Master analyzes traffic data, field information and other available information pertaining to the particular area of concern prior to the Public Hearing. The Hearing Master may request that additional traffic studies be conducted by staff on nearby roads and streets if he or she determines that those roads and streets may potentially be impacted by the installation of traffic calming measures.

7.4 Step 4: Hearing Master Public Hearing

7.41 Notice of Public Hearing

Residents within the community where proposed traffic calming measures are being considered will be given notice of a Public Hearing. In accordance with the "Neighborhood Bill of Rights", methods of notification will include:

Placards - Notice of Public Hearing signs will be posted at least 20 days before the hearing at strategic sites within the neighborhood.

Newspaper Advertisement - Notice will be published in a local newspaper by the City's Public Information Office.

The following methods of notice may also be used:

News Releases - A news release of public meetings will be provided to the local media two weeks prior to the Public Hearing.

Flyers - "What's Happening In Your Neighborhood" may be distributed by staff to residents on subject travel route.

Informational pamphlets setting forth the advantages and disadvantages of speed humps may be distributed and are available through the City staff.

Television - Advertisement on the Government Access Television Channel.

Any resident who is unable to attend a scheduled Public Hearing may submit his or her comments in writing to staff of the Public Works Department at any time prior to or during the Public Hearing, and those comments will be considered by the Hearing Master in making his or her recommendation.

7.42 Purpose of Public Hearing

A public hearing will be conducted by the Hearing Master to present options for traffic calming measures with the Subject Travel Route¹ and to obtain input from the public on those options. Residents of nearby roads and streets which may suffer an impact as a result of the proposed traffic calming measures shall also be given the opportunity to request traffic calming measures on those roads and streets. Requests for traffic calming on nearby roads and streets will be subject to the standard procedures in this manual and treated as new requests.

7.5 Step 5: Hearing Master Recommendation of Traffic Calming Measures and Designation of Affected Area for Petition

Based upon the information provided by staff and input received from the public in writing and at the public hearing, the Hearing Master will make a recommendation. The Hearing Master will recommend the type, number and location of traffic calming measures appropriate within the Subject Travel Route.

The Hearing Master will also determine the Affected Area of residents for petition purposes. The "Affected Area"; are those residents affected by the deleterious effects of excessive speeding and traffic volume. The Hearing Master will set forth the basis for the determination of the Affected Area in his or her recommendation to the CC.

Temporary traffic calming measures may be recommended at the discretion of the Hearing Master. The objective of such an installation in a residential community would be to test the effectiveness and demonstrate the benefit of the traffic calming measure. The use of temporary devices also may be advantageous when budget constraints delay the installation of the permanent device.

7.6 Step 6: Petition

A petition form to obtain neighborhood consensus for the recommended calming measure will be issued by the Public Works Department to the person initiating the request (contact person). The contact person will receive a map highlighting the affected area to be petitioned. The location of the proposed traffic calming measures will be illustrated on the petition. The contact person is responsible for distributing the petition to obtain signatures of property owners in the Affected Area.

¹*The Subject Travel Route includes the road or street on which traffic calming measures are proposed, as well as intersecting roads or streets, dead end streets or circle streets which have no other access to properties other than the road or street on which the traffic calming measure is to be installed.*

7.61 Petition Signature Requirements

The contact person is required to obtain signatures of 75% of all property owners in the affected area for or against consideration of traffic calming measures. If, after diligent effort, the contact person cannot obtain the required amount of signatures as previously stated, the contact person may be allowed to achieve this goal through an alternative method. This alternative method must be approved by staff and shall adhere to the following procedures:

A United States Post Office certified letter must be mailed to the remaining property owners in the affected area by the contact person.

This certified letter shall contain the petition issued for the affected area and a memo provided by staff explaining the RTC process.

Each affected property owner shall be counted as one vote, regardless of the number of separate properties owned. In the case of multiple owners, only one vote shall be counted for that property. A minimum of 75% for volume calming or 60% for speed calming measures of the property owners within the affected area must be in favor of the proposed traffic calming measures before the traffic calming can be approved. All vacant property within the Affected Area should be listed on the petition as vacant by the contact person. A sufficient number of non-resident owners must be contacted if the minimum petition threshold 75% for volume calming or 60% for speed calming measures cannot be met because of an excessive amount of vacant properties.

The contact person has 90 days to return completed petition forms. Petitions not received within the 90 day period will be deemed null and no further action will be taken. Prior to the expiration of the initial 90 day period, a one-time extension of the 90 days may be granted in writing by the Public Works Director.

However, in no case will petitions be accepted later than 180 days from the beginning of the initial signature period. Positive identification may be required at the time of signature of the petition. Signatures are final and may not be added or removed from a petition once the petition has been received by City staff.

If a location fails to achieve the necessary petition majority within the signature period, the location shall not be reconsidered for a period of at least three years from the date the signature period expires.

8.0 Removal of Speed and Volume Traffic Calming Measures

A petition for the removal of traffic calming measures may be accepted provided that the following conditions are met:

- A. The traffic calming measure to be removed must be in place for a minimum of a three-year period.
- B. A request for a removal petition must be signed by the owners of five separate properties in the Affected Area.
- C. The Hearing Master's recommendations must be in favor of the removal of the traffic calming measures.
- D. The new petition area must include the same Affected Area as the original.
- E. Approval of 75 percent for volume calming or 60 percent for speed calming measures of the property owners in the original Affected Area is required for consideration by the BOCC for removal of traffic calming measures.

If a location fails to achieve the necessary petition majority within the signature period, the location shall not be reconsidered for removal for a period of at least three years from the date the signature period expires.

Approval to remove traffic calming measures will require a minimum of 5 out of 7 votes of the CC in favor of the removal.

9.0 Emergency Procedures

The City may, at its option, install traffic calming measures in emergency situations as certified by the Sheriff or as supported by traffic studies.

Certification by the Sheriff of an emergency situation shall be in writing, and shall state that the imminent health and safety of the public are at risk. Emergency situations typically exist where bodily injury or severe property damage has occurred as a result of speed or volume on a street which qualifies for consideration of Residential Traffic Calming Measures. The certification must describe the nature of the emergency and its direct relation to an affected area's traffic speed, or volume concern. This certification must be signed by the Sheriff or a Department Commander.

or

Where the 85th percentile speed is measured at 25 miles per hour or greater in excess of the posted speed, but in no case less than 50 mph, regardless of the posted speed, the City's Public Works Director may authorize the installation of speed calming measures.

or

Where other industry-standard traffic engineering studies indicate the need to reduce speeds in an effort reduce crashes that may be susceptible to correction through the use of traffic calming devices, the City's Public Works Director may authorize the installation of speed calming measures. Only those locations where a severe crash rate has been confirmed will be considered in this situation.

Locations which have traffic calming measures installed through emergency procedures must be ratified by the City Commission.

The City may, at its option remove, traffic calming devices that have been installed in Emergency situations when it is deemed that removal of the devices would significantly improve the operational characteristics and safety of the road.

10.0 Who Do I Call for Help?

Should you have any questions regarding our program, please feel free to call the Public Works Department at **(386) 878-8950**.

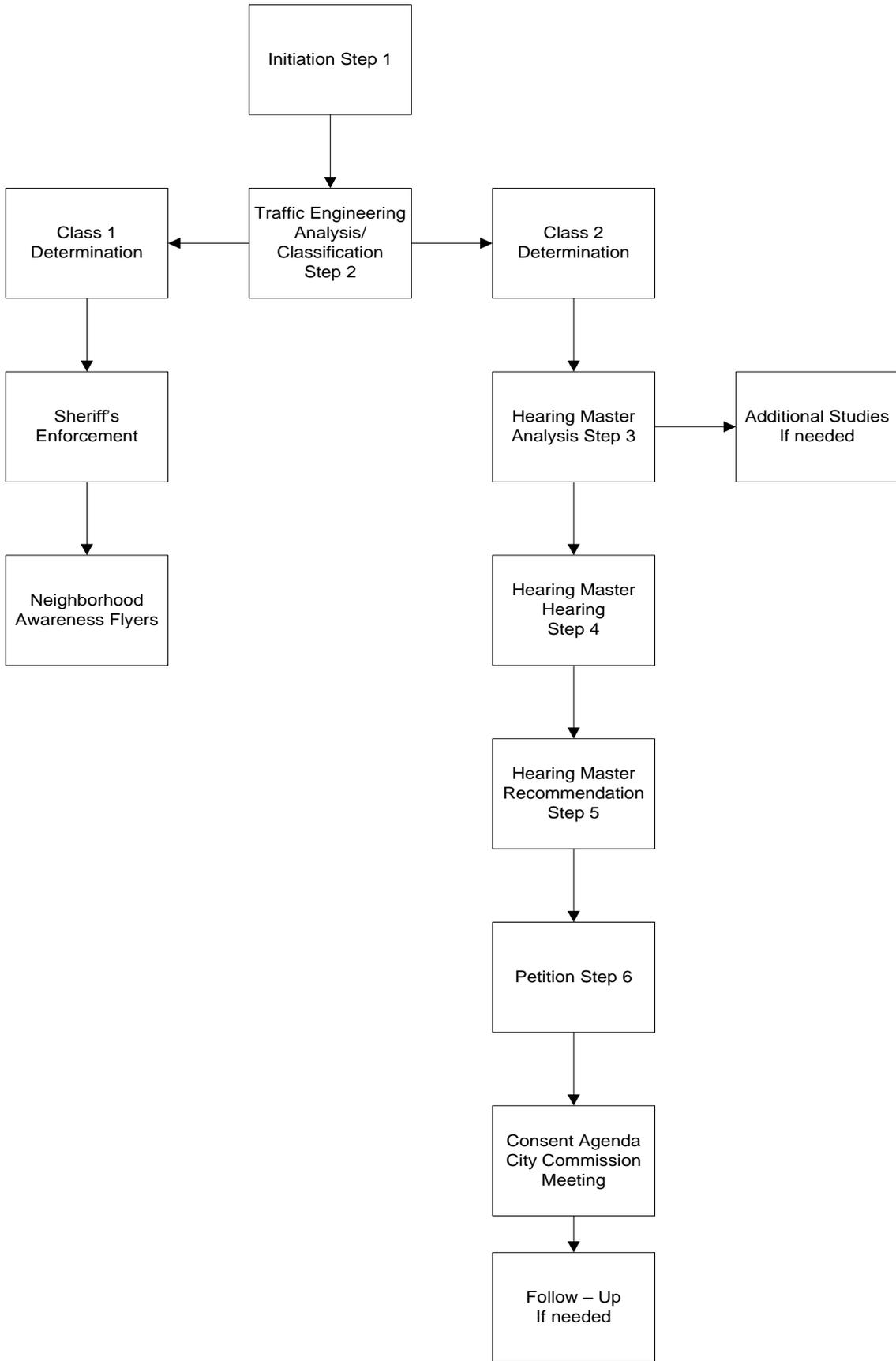
Thank you for your interest in YOUR neighborhood's traffic safety.

11.0 Effective Date

The effective date of this handbook is July 2nd, 2007.

Any locations where traffic calming measures have been installed prior to July 2nd, 2007, shall be subject to the procedures in this handbook for full or partial removal requests, including the 3-year waiting period from the date of installation for initiation of the process to remove any or all traffic calming measures.

All installation petitions issued prior to July 2nd, 2007 will follow the prior version of this handbook for petition procedures only. All other Procedures and standards established in this manual will apply to all installations after July 2nd, 2007.



Standard Procedure Diagram